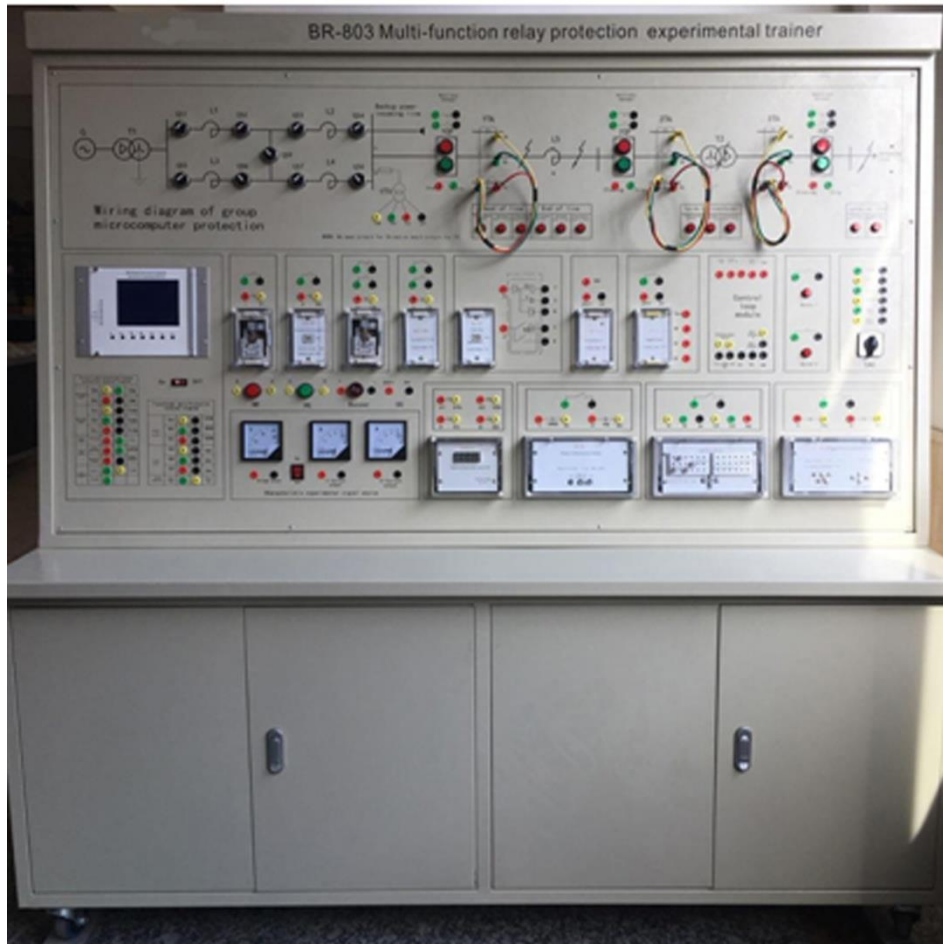


SWITCH GEAR & PROTECTION TRAINING SYSTEM SB-803



Overview:

1. Work environment: Temperature: $-10^{\circ}\text{C}\sim+40^{\circ}\text{C}$, relative humidity: $<85\%$ (25°C), altitude: $<4000\text{m}$
2. Installed capacity: $<1000\text{W}$

1. Signal generation part

It is mainly composed of three-phase voltage regulator, phase shifter, reactor, voltage transformer, current transformer and so on. The experimental system uses a three-phase voltage regulator to generate an adjustable voltage signal, a real reactor group to generate a current signal, and a phase shifter to adjust the current signal flexibly. Voltage transformers and current transformers convert the large voltage and high current signals of the simulated primary equipment into secondary voltage and current signals and provide them to the relay protection device.

2. Primary wiring diagram

The experimental system includes a simulation wiring diagram of relay protection, which is composed of system power, 2 lines, 1 transformer, and multiple analog circuit breakers, and provides backup power and load interfaces. A simulation of the main wiring can simulate the maximum, minimum, and normal operating modes of the system, and it can simulate the neutral and direct grounding systems. The line impedance has multiple reactance taps, which can simulate

lines of different lengths. Grounding, phase-to-phase short-circuit and three-phase short-circuit faults can be set on the lines and transformers that simulate the main wiring once.

3. Conventional relay and control loop

The experimental system includes conventional relays such as conventional current relays, voltage relays, power direction relays, impedance relays, differential relays, coincidence relays, time relays, intermediate relays, flash relays, and impact relays. Conventional relays can be used alone or as a group for relay protection.

Relay characteristic experiment:

1. Overview of Relay Characteristics Experiment
2. Conventional current relay characteristic experiment
3. Conventional voltage relay characteristic experiment
4. Conventional power direction relay characteristic experiment
5. Conventional differential relay characteristic experiment
6. Conventional impedance relay characteristic experiment
7. Digital current relay characteristic experiment
8. Digital voltage relay characteristic experiment
9. Digital power direction relay characteristic experiment
10. Digital differential relay characteristic experiment
11. Digital impedance relay characteristic experiment

Relay protection group experiment:

1. Overview of relay protection group experiments
2. Current protection experiment under maximum, minimum and normal operating modes
3. Conventional current quick-break protection and current-voltage interlocking quick-break protection experiment
4. Overload protection experiment
5. Directional current protection experiment
6. Low-voltage starting over-current and compound voltage starting over-current protection experiment
7. Comprehensive experiment of conventional current-voltage interlocking protection and three-phase one-time reclosing
8. Over current protection and automatic reclosing pre-acceleration and post-acceleration protection experiments
9. Zero sequence voltage protection experiment
10. Comprehensive experiment of 110KV line microcomputer protection
11. Comprehensive experiment of transformer protection

Power plant electrical course experiment:

1. Circuit breaker control loop experiment with emergency light control
2. Circuit breaker control loop experiment with anti-trip function
3. Central signal experiment composed of flashing relay
4. Central acoustic signal experiment composed of impact relay